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EXAMINER	
ROMAN, LUIS ENRIQUE	
ART UNIT	**PAPER NUMBER**
2836	

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Please find below and/or attached an Office communication concerning this application or proceeding.

H'A

Office Action Summary	Application No.	Applicant(s)	
	10/692,298	MECHANIC ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 34 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-34 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 2 recites that the first switch is in parallel between neutral and ground while claim 3 recites that the first switch is in series in the neutral lead.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 5 recites that the first switch is in parallel between neutral and ground while claim 6 recites that the first switch is in series in the neutral lead.

Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 5 recites that the first switch is in parallel between neutral and ground while claim 8 recites that the first switch is in series in the neutral lead.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 16 recites that the first switch is in parallel between neutral and ground while claim 17 recites that the first switch is in series in the neutral lead.

Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 18 recites that the first switch is in parallel between neutral and ground while claim 19 recites that the first switch is in series in the neutral lead.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 18 recites that the first switch is in parallel between neutral and ground while claim 21 recites that the first switch is in series in the neutral lead.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 14, 15 & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawrence (US 6288917).

Regarding claim 1 Lawrence discloses a protective circuit having hot (Fig. 2 element 34), neutral (Fig. 2 element 36), and ground (Fig. 2 element 38) leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a multi-phase power distribution network and corresponding device hot, neutral, and ground leads of at least one electrical and/or electronic device (Fig. 2 element 40), the protective circuit comprising: a neutral-ground voltage surge protection/filtration circuit including at least one LC (Fig. 2 elements 96, 98, 106, 108) filter circuit component having at least one inductive component (Fig. 2 element 88) disposed in the circuit ground lead, at least one capacitor (Fig. 2 element 96, 98) connected between the circuit neutral and circuit ground leads after the inductor towards the device, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices.

Regarding claim 14 Lawrence discloses the protective circuit of claim 1. Lawrence further disclose wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 element 106, 108) and a plurality of LC filter circuit component, each LC filter circuit including at least one inductor (Fig. 2 element 88) disposed in the circuit ground lead and at least one capacitor (Fig. 2 element 96, 98) connected between the circuit neutral and circuit ground leads after the inductor toward the device, where the LC filter circuits is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices.

Regarding claim 15 Lawrence discloses a protective circuit having hot (Fig. 2 element 34), neutral (Fig. 2 element 36), and ground (Fig. 2 element 38) leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and ground leads of electrical and/or electronic devices (Fig. 2 element 40), the protection/filtration circuit comprising: a hot-neutral voltage surge protection circuit (Fig. 2 elements 84, 94, 104, 96, 106) component connected between the circuit hot and neutral leads, a hot-ground voltage surge protection circuit (Fig. 2 elements 88, 98, 108, 96, 106) component connected between the circuit hot and ground leads; and neutral-ground voltage surge protection/filtration circuit (Fig. 2 elements 86, 96, 106, 94, 104) component connected between the circuit neutral and circuit round leads including at least one LC filter circuit component having at least one inductor disposed in the circuit ground lead (Fig. 2 element 88), at least one capacitor connected between the circuit neutral and circuit ground (Fig. 2 elements 98, 96) leads after the inductor and a resistor (Fig. 2 elements 108, 106) adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

Regarding claim 27 Lawrence discloses the protective circuit of claim 15. Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 elements 106, 108) and a plurality of LC filter (Fig. 2 elements 88, 84, 86, 94, 96, 98) circuit component, each LC filter circuit including at least one inductor disposed in the circuit ground lead (Fig. 2 element 88) and at least one capacitor (Fig. 2 elements 96, 98) connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 16, 18, 20, 22, 23, 24 & 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 5179490) in view of Winch et al. (US 6040969).

Regarding claim 2 Lawrence discloses the protective circuit of claim 1.
Lawrence does not disclose further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.
Winch et al. teaches further comprising: a first relay (Fig. 1 element 34) controlling at least one first switch (Fig. 1 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (LC filter described by Lawrence) where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit (LC filter described by Lawrence) component.
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lawrence device with the Winch et al. device features to provide improved attenuation of all continuous or repetitive common mode interference including RFI and lower frequency disturbances such as power line harmonics.

Regarding claim 16 Lawrence discloses the protective circuit of claim 15. Lawrence does not disclose further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component. Winch et al. teaches further comprising: a first relay (Fig. 1 element 34) controlling at least one first switch (Fig. 1 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (Lawrence Fig. 2 elements 88, 98, 108, 106, 96) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

Regarding claim 18 Lawrence discloses the protective circuit of claim 15. Winch et al. further discloses comprising: a first relay (Fig. 1 element 34) controlling a first switch (Fig. 1 element 32), a first relay (Fig. 1 element 34) controlling at least one first switch (Fig. 1 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (Lawrence Fig. 2 elements 88, 98, 108, 106, 96) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component (Lawrence Fig. 2 elements 88, 98, 108, 106, 96); a second relay (Fig. 4 element 34) controlling a second switch (Fig. 4 element 62), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit (Fig. 4 element 62) component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component (combining the circuits of Fig. 6 & Fig. 9 all the different kind of protections can be achieved with the purpose of the highest reliability).

Regarding claim 20 Lawrence discloses the protective circuit of claim 18. Winch et al. further discloses wherein when the second switch (Fig. 4 element 62) is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device (Fig. 4 element 62, A<T1, T2>) and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead (Fig. 4 element 62, A<T1, T2>).

Regarding claim 22 Lawrence discloses the protective circuit of claim 18. Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 23 Lawrence discloses the protective circuit of claim 18. Winch et al. further discloses further comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 24 Lawrence discloses the protective circuit of claim 18. Winch et al. further discloses further comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); an electronic switch (Fig. 5 element Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 25 Lawrence discloses the protective circuit of claim 18. Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46)

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 6288917) in view of Billingsley (US 5136455).

Regarding claim 4 Lawrence discloses the protective circuit of claim 1.
Lawrence does not discloses further comprising: a hot-neutral voltage surge protection/filtration circuit component adapted to substantially reduce noise between the hot and neutral ends and to clamp a voltage between the leads, and a hot-ground voltage surge protection circuit component adapted to substantially reduce noise between the hot and ground ends and to clamp a voltage between the leads.
Billingsley teaches further comprising: a hot-neutral voltage surge protection/filtration circuit (Fig. 2) component adapted to substantially reduce noise between the hot and neutral ends and to clamp (col. 8 lines 15-19 & Fig. 2 elements 56, 60, 66, 68) a voltage between the leads, and a hot-ground voltage (Fig. 2) surge protection circuit component adapted to substantially reduce noise between the hot and ground ends and to clamp (col. 8 lines 15-19 & Fig. 3 elements 58, 60, 62, 64) a voltage between the leads.
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lawrence device with the Billingsley device features to provide efficient suppression of all types of EMI (RFI and transients) in normal and common modes. This device also maintains its performance characteristics over a long period of time; it will not degrade in performance.

Claims 5, 7, 9, 10, 11, 12, 28, 29, 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 6288917) in view of Billingsley (US 5136455) and Winch et al. (US 6040969).

Regarding claim 5 Lawrence in view of Billingsley discloses the protective circuit of claim 4.
Lawrence in view of Billingsley does not disclose further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

Winch et al. discloses further comprising: a first relay (Fig. 6 element 34) controlling at least one first switch (Fig. 6 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (protection circuit described by Lawrence) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay (Fig. 8 element 34) controlling a second switch (Fig. 8 element 62), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge (Billingsley Fig. 9 element 180), protection circuit component and the hot-ground (Billingsley Fig. 9 element 182) voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lawrence and Billingsley device with the Winch et al. device features to provide improved attenuation of all continuous or repetitive common mode interference including RFI and lower frequency disturbances such as power line harmonics.

Regarding claim 7 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses wherein when the second switch (Fig. 4 element 62 A<T1, T2>) is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

Regarding claim 9 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value (Fig. 5 element 66), a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 10 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 5 element 66) adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch (Fig. 5 element 30) for providing current to the relay circuit (Fig. 5 element 34); and an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 11 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 1 element 66) adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch (Fig. 5 elements Q1, Q2) responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 12 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 5.
Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46).

Regarding claim 28 Lawrence discloses a protective circuit having hot, neutral, and ground leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and ground leads of electrical and/or electronic devices, the protection/filtration circuit comprising: a neutral-ground voltage surge protection/filtration circuit component connected between the circuit neutral and circuit ground leads including at least one LC filter circuit component (Fig. 2 elements 96, 98, 88) having at least one inductor (Fig. 2 element 88) disposed in the circuit ground lead, at least one capacitor (Fig. 2 elements 96, 98) connected between the circuit neutral and circuit ground leads after the inductor and a resistor (Fig. 2 elements 106, 108) adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate round noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.
Lawrence does not disclose a hot-neutral voltage surge protection circuit component connected between the circuit hot and neutral leads, a hot-ground voltage surge protection circuit component connected between the circuit hot and ground leads.

Lawrence does not disclose a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; and a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component, and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

Billingsley teaches a hot-neutral voltage surge protection circuit (Fig. 9 element 180) component connected between the circuit hot and neutral leads, a hot-ground voltage surge protection circuit (Fig. 9 element 182) component connected between the circuit hot and ground leads.

Winch et al. teaches a first relay (Fig 6 element 34) controlling at least one first switch (Fig 6 element 32), where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit (Lawrence circuit described above) and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; and a second relay (Fig 8 element 34) controlling a second switch (Fig 8 element 62), where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit (Billingsley circuit described above) component and the hot-ground voltage surge protection circuit (Billingsley circuit described above) component, and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lawrence device firstly with the Billingsley device features to provide efficient suppression of all types of EMI (RFI and transients) in normal and common modes. This device also maintains its performance characteristics over a long period of time; it will not degrade in performance. And secondly with Winch et al. device features to provide improved attenuation of all continuous or repetitive common mode interference including RFI and lower frequency disturbances such as power line harmonics.

Regarding claim 29 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further disclose comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage on the circuit hot lead (Fig. 1 element 12) exceeds a threshold value (Fig. 1 determined by voltage divider R1, R2); a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit (Fig. 1 element 34); and an electronic switch (Fig. 1 element D3, D4) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 30 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further disclose comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage between the circuit hot and neutral leads (Fig. 1 element 12) exceeds a threshold value(Fig. 1 determined by voltage divider R1, R2), a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit, and an electronic switch (Fig. 1 element D3, D4) responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

Regarding claim 31 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further discloses comprising: a voltage threshold sensing circuit (Fig. 1 element 30) adapted to detect when the voltage on the circuit hot lead (Fig. 1 element 18) exceeds a threshold value (Fig. 1 determined by voltage divider R!, R2); a relay supply switch (Fig. 1 element Q1, Q2) for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit (Fig. 1 element D3, D4) for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

Regarding claim 32 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Winch et al. further discloses comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed (col. 4 lines 36-46).

Regarding claim 34 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Lawrence further discloses wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor (Fig. 2 elements 96, 98) and a plurality of LC filter circuit component (Fig. 2 elements 84, 86, 88, 94, 96, 98), each LC filter circuit including at least one inductor (Fig. 2 elements 88) disposed in the circuit ground lead and at least one capacitor (Fig. 2 elements 96, 98) connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

Claims 13 & 26 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 6288917) in view of Misencik et al. (US 5032946).

Regarding claim 13 Lawrence discloses the protective circuit of claim 1.
Lawrence does not disclose further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.
Misencik et al. teaches further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lawrence device with the Misencik et al. device features since is desirable to provide with an instant indication of the operation of the device, in other words a quick view of how the device is performing without the requirement of having to test it with a multimeter or other measurement device.

Regarding claim 26 Lawrence discloses the protective circuit of claim 15.
Lawrence does not disclose further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.
Misencik et al. further discloses comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).

Claim 33 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lawrence (US 6288917) in view of Billingsley (US 5136455), Winch et al. (US 6040969) and Misencik et al. (US 5032946).

Regarding claim 33 Lawrence in view of Billingsley and Winch et al. discloses the protective circuit of claim 28.
Lawrence in view of Billingsley and Winch et al. does not disclose further comprising: a first indicator circuit for indicating a normal state and a second indicator circuit for indicating an abnormal state.
Misencik et al. teaches further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state (abstract).
It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lawrence device with the Misencik et al. device

features since is desirable to provide with an instant indication of the operation of the device, in other words a quick view of how the device is performing without the requirement of having to test it with a multimeter or other measurement device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.
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Stephen W. Jackson 1-25-06

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